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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,620	04/16/2004	Tushar Saxena	03-4025	1310
32127 VERIZON PATENT MANAGEMENT GROUP 1515 N. COURTHOUSE ROAD, SUITE 500 ARLINGTON, VA 22201-2909	7590 07/16/2008		EXAMINER HOFTMAN, BRANDON S	
			ART UNIT 2136	PAPER NUMBER
			NOTIFICATION DATE 07/16/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@VERIZON.COM

# Office Action Summary

**Application No.**

10/826,620

**Applicant(s)**

SAXENA, TUSHAR

**Examiner**

BRANDON S. HOFFMAN

**Art Unit**

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) 16-20 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-15 and 21-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-15 and 21-26 are pending in this office action, claims 16-20 are withdrawn in response to the restriction requirement of February 15, 2008.

#### ***Specification***

2. The disclosure is objected to because of the following informalities: paragraph 0008 needs to be updated to reflect that application number 10/243,489 has matured into patent number 7,359,966.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-15 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaidya (U.S. Patent No. 6,279,113) in view of Borer (U.S. Patent No. 6,057,892).

Regarding claims 1 and 21, Vaidya teaches a method/computer program of reducing spread of data on a network, comprising:

- For each pair of sending node and receiving node, marking transmissions of data packets for said pair as marked transmissions when said spectral analysis indicates peak frequencies associated with said marked transmissions are different from peak frequencies associated with others of said transmissions for said pair over a window of a predetermined number of said time periods (col. 7, lines 12-24, col. 8, lines 1-15 and 40-56, col. 9, lines 3-20 and col. 11, lines 16-32);
- Marking transmissions of data packets as interruptible transmissions when marked transmissions from pairs having at least one of a common sending node and a common receiving node and within a specified number of said windows have corresponding frequencies (fig. 4, 8, 9 and 12, col. 8, lines 16-39);
- Estimating timing and length information for future data packets corresponding to said interruptible transmissions (col. 8, lines 16-39, "a predetermined time interval"); and
- Interrupting traffic of said future data packets based on said estimating (col. 10, lines 3-16 and col. 12, lines 11-42).

Vaidya does not teach obtaining a spectral analysis of times of arrival of data packets at receiving nodes of said network from sending nodes of said network over predetermined time periods.

Borer teaches obtaining a spectral analysis of times of arrival of data packets at receiving nodes of said network from sending nodes of said network over predetermined time periods (col. 7, line 56 through col. 8, line 4).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine obtaining a spectral analysis of the times of arrival of data packets, as taught by Borer, with the method of Vaidya. It would have been obvious for such modifications because spectral analysis separates a time series into cycles of different lengths; these lengths are easy to compare for purposes of determining spread of data over a network.

Regarding claims 2, 7, 9, 14, and 22, Vaidya as modified by Borer teaches wherein obtaining a spectral analysis comprises:

- Tracking times of arrival data; transforming said times of arrival data into time-series; parsing said time-series into said windows (see col. 7, line 56 through col. 8, line 4 of Borer); and
- Obtaining Lomb periodograms for said windows (see col. 6, lines 1-15 of Borer).

Regarding claims 3, 10, 15, and 23, Vaidya as modified by Borer teaches wherein estimating comprises applying a Hidden Markov Model technique for classifying said interruptible transmissions as belonging to one of a plurality of classes of transmissions having determinable characteristics (see col. 7, lines 32-58 of Vaidya).

Regarding claims 4, 13, and 24, Vaidya as modified by Borer teaches wherein interrupting comprises randomly removing data packets (see col. 2, lines 38-57 of Borer).

Regarding claims 5 and 25, Vaidya as modified by Borer teaches comprising:

- Interrupting for a specified time; and determining, after said specified time, if a further spectral analysis of times of arrival of data packets since beginning said interrupting indicates said peak frequencies associated with said marked transmissions (see fig. 9 of Vaidya).

Regarding claims 6 and 26, Vaidya as modified by Borer teaches comprising returning to estimating based on said further spectral analysis when said further spectral analysis indicates said peak frequencies associated with said marked transmissions (see fig. 9 of Vaidya).

Regarding claim 8, Vaidya teaches a method of reducing spread of data on a network, comprising:

- Comparing peak frequencies in successive ones of said periodograms for said sender node to determine if one of said periodograms includes a peak above a threshold at a frequency different from said peak frequencies in a preceding one of said periodograms (col. 7, lines 12-24, col. 8, lines 1-15 and 40-56, col. 9, lines 3-20 and col. 11, lines 16-32);

- Determining if at least one peak above said threshold at said frequency occurs in one of a predetermined number of previous periodograms for said sender node (fig. 12);
- Determining if said at least one peak at said frequency occurs in at least one of a specified number of periodograms obtained at said receiver node for other sender nodes of said network (fig. 12);
- Estimating timing and length information for future data packets corresponding to said frequency when said at least one peak at said frequency does not occur in one of said predetermined number of previous periodograms for said sender node and when said at least one peak at said frequency occurs in at least one of said specified number of periodograms obtained at said receiver node for other sender nodes of said network (col. 8, lines 16-39, "a predetermined time interval"); and
- Interrupting traffic of said future data packets corresponding to said frequency based on said estimating (col. 10, lines 3-16 and col. 12, lines 11-42).

Vaidya does not teach obtaining, at a receiver node of said network, periodograms based on times of arrival of data packets from a sender node of said network.

Borer teaches obtaining, at a receiver node of said network, periodograms based on times of arrival of data packets from a sender node of said network (col. 6, lines 1-36).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine obtaining periodograms based on times of arrival, as taught by Borer, with the method of Vaidya. It would have been obvious for such modifications because periodograms give a density of the spectral analysis, which separates a time series into cycles of different lengths; these lengths are easy to compare for purposes of determining spread of data over a network.

Regarding claim 11, Vaidya as modified by Borer teaches wherein interrupting comprises: randomly removing data packets for a specified time; determining, after said specified time, if said at least one peak at said frequency occurs in at least one additional periodogram based on times of arrival of data packets since beginning said interrupting; and returning to estimating based on including said additional periodograms with said specified number of periodograms when said at least one peak frequency occurs in said at least one additional periodogram (see col. 2, lines 38-57 of Borer and fig. 9 of Vaidya).

Regarding claim 12, Vaidya teaches a method of reducing spread of data on a network, comprising:



- Comparing successive periodograms for said sender node to determine when at least one new peak above a threshold is present in one of said periodograms (col. 7, lines 12-24, col. 8, lines 1-15 and 40-56, col. 9, lines 3-20 and col. 11, lines 16-32);
- Determining if said at least one new peak occurs in one of a predetermined number of previous periodograms for said sender node (fig. 12);
- Determining if said at least one new peak occurs in at least one of a specified number of periodograms obtained at said router node for other sender nodes of said network (fig. 12);
- Estimating timing and length information for future data packets corresponding to said at least one new peak when said at least one new peak does not occur in one of a predetermined number of previous periodograms for said sender node and when said at least one new peak occurs in at least one of said specified number of periodograms obtained at said router node for other sender nodes of said network (col. 8, lines 16-39, "a predetermined time interval"); and
- Interrupting traffic of said data packets corresponding to said at least one new peak based on said estimating (col. 10, lines 3-16 and col. 12, lines 11-42).

Vaidya does not teach obtaining, at a router node of said network, periodograms based on times of arrival of data packets from a sender node of said network.

Borer teaches obtaining, at a router node of said network, periodograms based on times of arrival of data packets from a sender node of said network (col. 6, lines 1-36).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine obtaining periodograms based on times of arrival, as taught by Borer, with the method of Vaidya. It would have been obvious for such modifications because periodograms give a density of the spectral analysis, which separates a time series into cycles of different lengths; these lengths are easy to compare for purposes of determining spread of data over a network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON S. HOFFMAN whose telephone number is (571)272-3863. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser G. Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brandon S Hoffman/  
Primary Examiner, Art Unit 2136